zintellect

**Reference Code:** EPA-ORD-NHSRC-2017-3
**Applicant Name:** hassett, patrick
**Applied Date:** 6/25/2018 8:49:34 PM

**Organization:** U.S. Environmental Protection Agency (EPA)
**Program:** Office of Research and Development/National Homeland Security Research Center (ORD/NHSRC)
**Application Status:** Completed

## General

| | | | |
|---|---|---|---|
| **First Name** | patrick | **Primary Email** | pshassett@humboldt.edu |
| **Middle Name** | Sherman | **Alternate Email** | |
| **Last Name** | hassett | | |
| **Preferred Name** | Patrick | | |
| **Home Phone** | | | |
| **Work Phone** | Personal Matters / Ex. 6 | | |

## Current Address

| | |
|---|---|
| **Country Name** | Personal Matters / Ex. 6 |
| **Address** | |
| **Address 2** | |
| **State / Province / Region** | |
| **City** | |
| **Zip / Postal Code** | |

## Permanent Address

| | |
|---|---|
| **Country Name** | Personal Matters / Ex. 6 |
| **Address** | |
| **Address 2** | |
| **State / Province / Region** | |
| **City** | |
| **Zip / Postal Code** | |

## Education

| | |
|---|---|
| **Education Status** | Completed |
| **Degree** | Bachelor's Degree |
| **Institution** | Humboldt State University |
| **Dates** | 8/20/2012 - 5/20/2018 |
| **Field of Study** | **Engineering:** Environmental Engineering |
| **Minor(s)/Area(s) of Concentration** | Music |
| **GPA** | 3.31 |

## Areas of Interest

- **Engineering:** Computer and Systems Engineering, Environmental Engineering

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**Conflict of Interest**

**Do you have relative(s) employed at National Homeland Security Research Center? Relatives are defined as parents, spouse, children, brothers, sisters, grandchildren, grandparents, grandparents-in-law, parents-in-law, brothers-in-law, sisters-in-law, sons-in-law, daughters-in-law, uncles, aunts, first cousins, nieces, and/or nephews. This information is collected to avoid possible conflict of interest in the placement of a participant.**

**Relevant Experience**

**Organization** Humboldt State University Learning Center

**Role** Engineering Tutor

**Description** Facilitated group study sessions and helped guide students through assignments for engineering coursework.

**Dates** 2/20/2016 - 12/20/2016

**Organization** An Electrician Inc.

**Role** Electric Drive Technician

**Description** Tested and repaired AC and DC drives of various power ratings for industrial applications. Operated a forklift and maintained part inventory.

**Dates** 6/20/2016 - 8/20/2016

**Organization** Achilli Research and Teaching Lab, Humboldt State University

**Role** Research Assistant

**Description** Developed and debugged a theoretical model for Pressure Retarded Osmosis processes and a corresponding GUI as part of a low-energy desalination research project. Also developed an Arduino-based program and hardware configuration for logging pressure, flow, and salinity data from sensors located in a RO-PRO hybrid desalination system. Performed data and result analysis between model and experimental results.

**Dates** 1/20/2017 -

**Awards, Certifications, or Licenses**

**Award** Meritorious Winner in 2016 Mathematical Contest in Modeling

**Goals**

**Please list your personal, educational, and professional goals and interests and explain how this opportunity may enable you to achieve those. Describe any experiences or situations that you feel have influenced your interest.**

It is my personal goal to aid in the development of more resilient civil infrastructure that can withstand the climactic changes of the future through my work. Professionally, I am interested in advancing my software development skills to begin programming at a professional level. I believe that this research opportunity can allow me to achieve both of these goals and give me valuable engineering experience with water distribution network analysis.

**Experience**

**Reference Code:** EPA-ORD-NHSRC-2017-3
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**Please list your research, technical and/or professional experience that is relevant to this opportunity.**

Over the past 18 months I have been developing, debugging, and calibrating a model for an energy-recovery membrane process as part of a low-energy desalination research project. While the scopes of a membrane model and an entire water distribution system are different by orders of magnitude, both are governed by the laws of fluid dynamics and energy and mass conservation. I believe that my past experiences with software development will make me an integral and productive member of the research team.

**Skills**

**Please list your professional/technical skills and abilities that are relevant to this opportunity, including knowledge/skills related to specialized laboratory equipment or techniques, computer hardware, software or computer languages and/or applications.**

I have programming familiarity in Fortran, C, C++, Python, and VBA. Additionally I am familiar with the EPANet water distribution network analysis tool. I am proficient with the MS Office suite, including MS Access database management. I have studied fluid dynamics, systems analysis, and other environmental engineering related courses in my undergraduate education.

**Program Participation**

**Do you currently participate or have you previously participated in an ORAU or ORISE educational program?**
No

**If yes, list all project/assignment(s) in which you have participated including dates, location, and mentor for each assignment.**

**Availability**

**Preferred start date**
10/1/2018

**Preferred end date**
10/1/2019

# Unofficial Undergraduate Transcript

**Name:** **Patrick Hassett**
**Student ID:** **011445249**

Birthdate: XXXX-04-13
Institution Info: Humboldt State University
Print Date: 2018-06-25

**Beginning of Undergraduate Record**

**FALL 2012**

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| CHEM | 107 | Fundamentals of Chemistry | 4.000 | 4.000 | A | 16.000 |
| CHEM | 198 | Supplemental Instruction | 1.000 | 1.000 | CR | 0.000 |
| ENGL | 105 | Introduction to Literature | 3.000 | 3.000 | A | 12.000 |
| MATH | 115 | Algebra & Elementary Functions | 4.000 | 4.000 | A | 16.000 |
| PHIL | 100 | Logic | 3.000 | 3.000 | A | 12.000 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 4.000 | Term Totals | 15.000 | 15.000 | 14.000 | 56.000 |
| HSU GPA | 4.000 | HSU Totals | 15.000 | 15.000 | 14.000 | 56.000 |
| Cumulative GPA | 4.000 | Cum Totals | 15.000 | 15.000 | 14.000 | 56.000 |

Term Honor: Presidential Scholar

**Good Standing**

**SPR 2013**

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| ART | 250 | Beginning Darkroom Photograph | 3.000 | 3.000 | A | 12.000 |
| BIOL | 105 | Principles of Biology | 4.000 | 4.000 | A- | 14.800 |
| ECON | 104 | Contemporary Topics in Econ | 3.000 | 3.000 | A | 12.000 |
| ENVS | 480 | Selected Topics in Envir. Sci. | 1.000 | 1.000 | CR | 0.000 |
| Course Topic: | | Herbalism | | | | |
| MATH | 109 | Calculus I | 4.000 | 4.000 | B+ | 13.200 |
| MUS | 107P | Percussion Ensemble | 1.000 | 1.000 | B | 3.000 |
| Course Topic: | | Percussion Ensemble - World | | | | |
| PE | 140 | Tai Chi Chuan Beginning | 1.000 | 1.000 | CR | 0.000 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 3.666 | Term Totals | 17.000 | 17.000 | 15.000 | 55.000 |
| HSU GPA | 3.827 | HSU Totals | 32.000 | 32.000 | 29.000 | 111.000 |
| Cumulative GPA | 3.827 | Cum Totals | 32.000 | 32.000 | 29.000 | 111.000 |

**Good Standing**

**FALL 2013**

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| CHEM | 109 | General Chemistry I | 5.000 | 5.000 | B+ | 16.500 |
| ENGR | 115 | Intro to Env Resources Engr | 3.000 | 3.000 | B+ | 9.900 |
| ENGR | 210 | Solid Mechanics Statics | 3.000 | 3.000 | A | 12.000 |
| MATH | 110 | Calculus II | 4.000 | 4.000 | C+ | 9.200 |
| MUS | 107P | Percussion Ensemble | 1.000 | 1.000 | B+ | 3.300 |
| Course Topic: | | Percussion Ensemble - World | | | | |
| PE | 259 | Yoga | 1.000 | 1.000 | CR | 0.000 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 3.181 | Term Totals | 17.000 | 17.000 | 16.000 | 50.900 |
| HSU GPA | 3.597 | HSU Totals | 49.000 | 49.000 | 45.000 | 161.900 |
| Cumulative GPA | 3.597 | Cum Totals | 49.000 | 49.000 | 45.000 | 161.900 |

**Good Standing**

**SPR 2014**

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| AHSS | 150 | Marching Lumberjacks | 1.000 | 1.000 | CR | 0.000 |
| ENGR | 215 | Intro to Design | 3.000 | 3.000 | B | 9.000 |
| ENGR | 225 | Comp Methds for Env Engrng I | 3.000 | 3.000 | A- | 11.100 |
| MATH | 210 | Calculus III | 4.000 | 4.000 | B+ | 13.200 |
| MUS | 108V | Beginning Voice | 1.000 | 1.000 | A | 4.000 |
| PE | 140 | Tai Chi Chuan Beginning | 1.000 | 1.000 | CR | 0.000 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 3.390 | Term Totals | 13.000 | 13.000 | 11.000 | 37.300 |
| HSU GPA | 3.557 | HSU Totals | 62.000 | 62.000 | 56.000 | 199.200 |
| Cumulative GPA | 3.557 | Cum Totals | 62.000 | 62.000 | 56.000 | 199.200 |

**Good Standing**

**FALL 2014**

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| CHEM | 110 | General Chemistry II | 5.000 | 5.000 | C | 10.000 |
| ENGR | 211 | Solid Mechanics Dynamics | 3.000 | 3.000 | B | 9.000 |
| ENGR | 313 | Systems Analysis | 3.000 | 3.000 | B+ | 9.900 |
| MUS | 407C | Calypso Band | 1.000 | 1.000 | A | 4.000 |
| PHIL | 104 | Asian Philosophy | 3.000 | 3.000 | B+ | 9.900 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 2.853 | Term Totals | 15.000 | 15.000 | 15.000 | 42.800 |
| HSU GPA | 3.408 | HSU Totals | 77.000 | 77.000 | 71.000 | 242.000 |
| Cumulative GPA | 3.408 | Cum Totals | 77.000 | 77.000 | 71.000 | 242.000 |

**Good Standing**

**SPR 2015**

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| AHSS | 150 | Marching Lumberjacks | 1.000 | 1.000 | CR | 0.000 |
| ENGR | 325 | Comp Mthds for Env Engnring II | 3.000 | 3.000 | C- | 5.100 |
| ENGR | 331 | Thermo & Energy Systems | 3.000 | 3.000 | C | 6.000 |
| HIST | 111 | U.S. History Since 1877 | 3.000 | 3.000 | CR | 0.000 |
| MUS | 407C | Calypso Band | 1.000 | 1.000 | A | 4.000 |
| PE | 347 | Master Swim | 1.000 | 1.000 | CR | 0.000 |
| PHYX | 110 | Gen Phyx II: Electricity, Heat | 4.000 | 4.000 | B- | 10.800 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 2.354 | Term Totals | 16.000 | 16.000 | 11.000 | 25.900 |
| HSU GPA | 3.267 | HSU Totals | 93.000 | 93.000 | 82.000 | 267.900 |
| Cumulative GPA | 3.267 | Cum Totals | 93.000 | 93.000 | 82.000 | 267.900 |

**Good Standing**

**FALL 2015**

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| AHSS | 150 | Marching Lumberjacks | 1.000 | 1.000 | CR | 0.000 |
| ENGR | 326 | Comp Mthds for Env Eng III | 3.000 | 3.000 | B- | 8.100 |
| ENGR | 351 | Water Quality & Envrmtl Health | 4.000 | 4.000 | B- | 10.800 |
| MUS | 407C | Calypso Band | 1.000 | 1.000 | A | 4.000 |
| MUS | 407P | Percussion Ensemble | 1.000 | 1.000 | A- | 3.700 |
| PE | 259 | Yoga | 1.000 | 1.000 | CR | 0.000 |
| PHYX | 315 | Intro to Electronics | 3.000 | 3.000 | B+ | 9.900 |
| PSCI | 359 | California Government | 3.000 | 3.000 | A | 12.000 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 3.233 | Term Totals | 17.000 | 17.000 | 15.000 | 48.500 |
| HSU GPA | 3.261 | HSU Totals | 110.000 | 110.000 | 97.000 | 316.400 |
| Cumulative GPA | 3.261 | Cum Totals | 110.000 | 110.000 | 97.000 | 316.400 |

**Good Standing**

**SPR 2016**

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| AHSS | 150 | Marching Lumberjacks | 1.000 | 1.000 | CR | 0.000 |
| ENGL | 104 | Accelerated Comp and Rhetoric | 3.000 | 3.000 | CR | 0.000 |
| ENGR | 322 | Envrnmntl Data Modeling & Anly | 4.000 | 4.000 | B | 12.000 |
| ENGR | 330 | Mech & Science of Materials | 3.000 | 3.000 | B | 9.000 |
| ENGR | 333 | Fluid Mechanics | 4.000 | 4.000 | B | 12.000 |
| MUS | 107C | Calypso Band | 1.000 | 1.000 | A | 4.000 |
| MUS | 107P | Percussion Ensemble | 1.000 | 1.000 | B+ | 3.300 |
| Course Topic: | | Percussion Ensemble - World | | | | |
| PE | 192 | Latin Dance | 1.000 | 0.000 | NC | 0.000 |
| PHYX | 399 | Supplemental Work in Phyx | 1.000 | 0.000 | NC | 0.000 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 3.100 | Term Totals | 19.000 | 17.000 | 13.000 | 40.300 |
| HSU GPA | 3.242 | HSU Totals | 129.000 | 127.000 | 110.000 | 356.700 |
| Cumulative GPA | 3.242 | Cum Totals | 129.000 | 127.000 | 110.000 | 356.700 |

**Good Standing**

# Unofficial Undergraduate Transcript

**Name:** **Patrick Hassett**
**Student ID:** **011445249**

## FALL 2016

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| AHSS | 150 | Marching Lumberjacks | 1.000 | 1.000 | CR | 0.000 |
| ENGR | 416 | Transport Phenomena | 3.000 | 3.000 | A- | 11.100 |
| ENGR | 440 | Hydrology I | 3.000 | 3.000 | B+ | 9.900 |
| ENGR | 475 | Renewable Energy Power Syste | 3.000 | 3.000 | B- | 8.100 |
| MUS | 107P | Percussion Ensemble | 1.000 | 1.000 | A | 4.000 |
| Course Topic: | | Percussion Ensemble - Contemp | | | | |
| MUS | 232 | Studio Percussion | 1.000 | 1.000 | A | 4.000 |
| MUS | 302 | Music in World Culture | 3.000 | 3.000 | A | 12.000 |
| MUS | 407C | Calypso Band | 1.000 | 1.000 | A | 4.000 |
| MUS | 407P | Percussion Ensemble | 1.000 | 0.000 | A | 0.000 |
| Course Topic: | | Percussion Ensemble - World | | | | |
| Repeated: | | E | | | | |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 3.540 | Term Totals | 17.000 | 16.000 | 15.000 | 53.100 |
| HSU GPA | 3.278 | HSU Totals | 146.000 | 143.000 | 125.000 | 409.800 |
| Cumulative GPA | 3.278 | Cum Totals | 146.000 | 143.000 | 125.000 | 409.800 |

Term Honor: Dean's List
**Good Standing**

## SPR 2017

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| ENGR | 452 | Water Tx and Reuse Systems | 3.000 | 3.000 | B+ | 9.900 |
| ENGR | 473 | Building Energy Analysis | 3.000 | 3.000 | A | 12.000 |
| ENGR | 498 | Directed Design Project | 1.000 | 1.000 | A | 4.000 |
| MUS | 232 | Studio Percussion | 1.000 | 1.000 | A- | 3.700 |
| MUS | 407C | Calypso Band | 1.000 | 1.000 | A | 4.000 |
| MUS | 407P | Percussion Ensemble | 1.000 | 1.000 | A | 4.000 |
| Course Topic: | | Percussion Ensemble - World | | | | |
| Repeated: | | I | | | | |
| SOC | 303 | Race & Inequality | 3.000 | 3.000 | B | 9.000 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 3.584 | Term Totals | 13.000 | 13.000 | 13.000 | 46.600 |
| HSU GPA | 3.307 | HSU Totals | 159.000 | 156.000 | 138.000 | 456.400 |
| Cumulative GPA | 3.307 | Cum Totals | 159.000 | 156.000 | 138.000 | 456.400 |

Term Honor: Dean's List
**Good Standing**

## FALL 2017

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| ENGR | 410 | Environ. Health & Impact Asmnt | 3.000 | 3.000 | B | 9.000 |
| ENGR | 492 | Capstone Design Project | 3.000 | 3.000 | B- | 8.100 |
| MUS | 104 | Intro to Music | 3.000 | 3.000 | C | 6.000 |
| MUS | 107P | Percussion Ensemble | 1.000 | 1.000 | A | 4.000 |
| Course Topic: | | Percussion Ensemble - Contemp | | | | |
| MUS | 110 | Fundamentals of Music | 3.000 | 3.000 | B- | 8.100 |
| MUS | 232 | Studio Percussion | 1.000 | 1.000 | A | 4.000 |
| MUS | 407C | Calypso Band | 1.000 | 1.000 | A | 4.000 |
| MUS | 407Q | World Percussion Ensemble | 1.000 | 1.000 | A | 4.000 |
| PE | 289 | Special Topics - Activity | 1.000 | 1.000 | CR | 0.000 |
| Course Topic: | | Disc Golf | | | | |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 2.950 | Term Totals | 17.000 | 17.000 | 16.000 | 47.200 |
| HSU GPA | 3.270 | HSU Totals | 176.000 | 173.000 | 154.000 | 503.600 |
| Cumulative GPA | 3.270 | Cum Totals | 176.000 | 173.000 | 154.000 | 503.600 |

**Good Standing**

## SPR 2018

| Course | | Description | Attempted | Earned | Grade | Points |
|---|---|---|---|---|---|---|
| ECON | 309 | The Econ of a Sustainable Soc | 3.000 | 3.000 | CR | 0.000 |
| MUS | 106J | AM Jazz Band | 1.000 | 1.000 | A | 4.000 |
| Course Topic: | | AM Jazz Band | | | | |
| MUS | 107P | Percussion Ensemble | 1.000 | 1.000 | A | 4.000 |
| Course Topic: | | Percussion Ensemble - Contemp | | | | |
| MUS | 108C | Afro-Cuban Percussion | 1.000 | 1.000 | B+ | 3.300 |
| MUS | 214 | Theory I | 3.000 | 3.000 | A | 12.000 |
| MUS | 216 | Ear Training I | 1.000 | 0.000 | NC | 0.000 |
| MUS | 232 | Studio Percussion | 1.000 | 1.000 | A | 4.000 |
| MUS | 407C | Calypso Band | 1.000 | 1.000 | A | 4.000 |
| MUS | 407Q | World Percussion Ensemble | 1.000 | 1.000 | A | 4.000 |

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| Term GPA | 3.922 | Term Totals | 13.000 | 12.000 | 9.000 | 35.300 |
| HSU GPA | 3.306 | HSU Totals | 189.000 | 185.000 | 163.000 | 538.900 |
| Cumulative GPA | 3.306 | Cum Totals | 189.000 | 185.000 | 163.000 | 538.900 |

**Good Standing**

### Undergraduate Career Totals

| | | | Attempted | Earned | GPA Units | Points |
|---|---|---|---|---|---|---|
| HSU GPA: | 3.306 | HSU Totals | 189.000 | 185.000 | 163.000 | 538.900 |
| Cumulative GPA | 3.306 | Cum Totals | 189.000 | 185.000 | 163.000 | 538.900 |

### Non-Course Milestones

Description: English Remediation
Status: Completed

Milestone Level: Remediation not Required
Milestone Title: English Remediation
Not Required

Description: Math Remediation
Status: Completed

Milestone Level: Not Required
Milestone Title: Math Remediation
Not Required

Description: Graduation Writing Proficiency
Status: Completed

Exam Taken

### Degrees Awarded

Degree: Bachelor of Science
Confer Date: 2018-05-18
Plan: Environmental Resources Engineering
Plan: Minor in Music

**End of Transcript**

# PATRICK S. HASSETT

1085 Buttermilk ln. | Arcata, CA 95521 | (510)-610-2024 | psh82@humboldt.edu

## EDUCATION

**Bachelor of Science, Environmental Resources Engineering (ABET Accredited)** May 2018
*Humboldt State University*

## WORK EXPERIENCE

Research Assistant- *Achilli Research and Teaching Lab*
- Developed and debugged a theoretical model for Pressure Retarded Osmosis processes and developed a corresponding GUI as part of a low-energy desalination research project. Also developed an Arduino-based program and hardware configuration for logging pressure, flow, and salinity data from sensors located in a RO-PRO hybrid desalination system. 2017

Electric Drive Technician- *An Electrician Inc. (Eureka, CA)*
- Tested and repaired AC and DC drives of various power ratings for industrial applications. Operated a forklift and maintained part inventory. Summer 2016

Environmental Resources Engineering Drop-in Study/Tutoring Tutor - *SHPE (HSU)*
- Facilitated group study sessions and helped guide students through assignments Spring, Fall 2016

Assistant Designer and Installer - *SkyPower Solar (San Ramon, CA)*
- Designed and installed residential solar arrays Summer 2015

Student Assistant - *Math 115 (HSU)*
- Helped students learn new concepts and solve assigned problems 2013-2014

Counselor - *CYO Summer Camp (Occidental, CA)*
- Led campers through daily activities, life guarded, and served as an inspirational leader Summer 2014

CCAT Volunteer - *Campus Center for Appropriate Technology (HSU)*
- Volunteered weekly for 2-4 hours doing maintenance, landscaping/garden work 2012-2014

## SKILLS AND ABILITIES

### Relevant Project Experiences

***ENGR 492 Capstone Design***- Completed a comprehensive design of a Smart Water Grid system for the Blue Lake Rancheria consisting of a water treatment system, water storage components, and a distribution monitoring and control system.

***ENGR 452 Water Treatment and Reuse Systems*** - Completed a survey quantifying the waste water available for brine comingling in accordance with the 2015 California Ocean Plan desalination brine discharge amendment.

***ENGR 475 Renewable Energy Power Systems*** - Designed an 820 kW solar array for installation at the Arcata Airport and completed economic analysis.

***ENGR 473 Building Energy Analysis*** - Evaluated the implementation of an air-source heat pump HVAC system as part of an initial analysis for a building retrofit on the HSU Campus.

### Computer and Software Skills

- High Skill and Familiarity: MS Office, Fortran 90, Arduino/C
- Intermediate Skill and Familiarity: Python, C++, EPANet, VBA, Auto CAD Civil 3D, SketchUp, LabView
- Experience in RStudio, ArcGIS, LT Spice, HEC SSP, HEC HMS

## PERSONAL ACHIEVEMENTS

**Meritorious Winner in 2016 Interdisciplinary Contest in Modeling**
- Developed a 3D transport model for heat transfer in a continuously stirred reactor

**Competitive Swimming**
- Competitor in North Coast Section high school swimming championships

**Hobbies**
- Percussionist in HSU Calypso Band, Contemporary and World Percussion Ensembles
- Avid cyclist, toured from San Francisco to Arcata

**Opportunity Title:** Modeling Resilience of Drinking Water Systems
**Opportunity Reference Code:** EPA-ORD-NHSRC-2017-3

**Organization** U.S. Environmental Protection Agency (EPA)

**Reference Code** EPA-ORD-NHSRC-2017-3

**How to Apply** A complete application consists of:

- An application
- Transcripts – Click here for detailed information about acceptable transcripts
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional references

All documents must be in English or include an official English translation.

If you have questions, send an email to *EPArpp@orau.org*. Please include the reference code for this opportunity in your email.

**Description** A postgraduate research project training opportunity is currently available at the U.S. Environmental Protection Agency's (EPA) National Homeland Security Research Center in Cincinnati, Ohio.

The participant will conduct research on a project to analyze the systems-level impacts of natural and man-made disasters on water systems and to evaluate approaches to increase resilience to such disasters and to intentional incidents. The participant will also be a member of a software development team that is leading the development of a drinking water distribution system resilience tool. The team conducts a broad range of activities supporting EPA's efforts to prepare and protect drinking water systems from natural disasters and terrorist attacks. The participant can expand the research project to include additional components from the team's activities, and can participate in a variety of challenging and rewarding projects. With guidance from a mentor, the research participant will conduct the following activities:

- Reviewing literature for natural disasters and other emergency incidents that have affected drinking water utilities.
- Gathering knowledge and data related to these incidents that could be used for modeling, simulation and analysis for case study applications.
- Evaluating and testing EPA's drinking water distribution system resilience tool on specific case study applications.
- Writing code and producing documentation.
- Testing and applying related water security software tools.
- Writing, reviewing, and editing scientific reports and presenting data at national conferences.
- Participating in relevant meetings and communications between researchers and stakeholders.

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education, was established through an interagency agreement between DOE and EPA. The appointment is full time for one year and may be renewed upon recommendation of EPA and contingent on the availability of funds. The participant will receive a monthly stipend. Funding may be made available to reimburse the participant's travel expenses to present the results of his/her research at scientific conferences. No funding will be made available to cover travel costs for pre-appointment visits, relocation costs, tuition and fees, or participant's health insurance. The participant must show proof of health and medical insurance. **The participant does not become an EPA employee**.

The mentor for this project is Terra Haxton (haxton.terra@epa.gov).

**Qualifications** Applicants must have received a bachelor's, master's, or doctoral degree in systems, environmental, civil, chemical, mechanical, software or electrical engineering, applied mathematics, computer science or a closely

**Opportunity Title:** Modeling Resilience of Drinking Water Systems
**Opportunity Reference Code:** EPA-ORD-NHSRC-2017-3

related field, within 5 years of the desired starting date, or have completed all requirements for the degree prior to the start date.

**Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within 60 months.
- **Discipline(s):**
  - **Computer Sciences** (17 👁)
  - **Engineering** (8 👁)
  - **Mathematics and Statistics** (2 👁)

**Applicant Name:** patrick hassett

**Organization:** U.S. Environmental Protection Agency (EPA)
**Program:** Office of Research and Development/National Homeland Security Research Center (ORD/NHSRC)

## Recommendation for patrick hassett

Submitted on 9/7/2018 1:58:05 PM

**patrick hassett** has applied for **Modeling Resilience of Drinking Water Systems** with **U.S. Environmental Protection Agency (EPA), Office of Research and Development/National Homeland Security Research Center (ORD/NHSRC)**.

Recommendations are never available to applicants and they have agreed, in the Zintellect terms in conditions, that they are waiving their right to see them. Each recommendation can be tailored to the opportunity and after you've submitted a recommendation for an applicant, it will be loaded into subsequent forms for edit/reuse.

View the Opportunity Details

### Information about you, the recommender

| | |
|---|---|
| **Name** | David Narum |
| **Title** | Project Manager |
| **Institution/Organization** | Blue Lake Rancheria |
| **Phone** | |

### Information about the applicant

**How long and in what association have you known this applicant?**
He worked for the Blue Lake Rancheria as part of an engineering capstone class at Humboldt State University as part of a group working on a design for our smart water grid, over the Spring Semester 2017. I knew Mr. Hassett over this time period.

Compared to other individuals of comparable age and experience you have known in the last five years, how would you rate the applicant with respect to the following PERSONAL CHARACTERISTICS?

| | |
|---|---|
| **Motivation and persistence toward a productive career** | Excellent |
| **Growth during total period observed** | No Basis For Judgment |
| **Imagination and originality of thought** | Very Good |
| **Emotional maturity and stability** | Excellent |
| **Ability to work with others** | Excellent |
| **Independence and self-reliance** | Very Good |
| **Leadership potential** | No Basis For Judgment |

Compared to other individuals of comparable age and experience you have known in the last five years, how would you rate the applicant with respect to the following SCIENTIFIC CHARACTERISTICS?

| | |
|---|---|
| **Mastery of fundamental knowledge in field** | Very Good |

**Applicant Name:** patrick hassett

**Organization:** U.S. Environmental Protection Agency (EPA)
**Program:** Office of Research and Development/National Homeland Security Research Center (ORD/NHSRC)

| | |
|---|---|
| **Skill/originality of research project design** | Excellent |
| **Laboratory skills and techniques** | No Basis For Judgment |
| **Productivity in research** | Very Good |
| **Ability to work with others** | Very Good |

**Add any descriptive comments that will assist in providing a complete picture of applicant's character, attitude, abilities, and potential.**

I was not the teacher of the capstone class, but rather a "client." That being said, the professors do a very good job of working with the students to teach them professionalism and thoroughness. Patrick and his team submitted a very well done report and a polished presentation as well. I cannot speak to the grade he received for the class, or about his overall academic performance, but his work for the Blue Lake Rancheria was fine.

**Applicant Name:** patrick hassett

**Organization:** U.S. Environmental Protection Agency (EPA)
**Program:** Office of Research and Development/National Homeland Security Research Center (ORD/NHSRC)

## Recommendation for patrick hassett

Submitted on 9/10/2018 2:52:31 AM

**patrick hassett** has applied for **Modeling Resilience of Drinking Water Systems** with **U.S. Environmental Protection Agency (EPA), Office of Research and Development/National Homeland Security Research Center (ORD/NHSRC)**.

Recommendations are never available to applicants and they have agreed, in the Zintellect terms in conditions, that they are waiving their right to see them. Each recommendation can be tailored to the opportunity and after you've submitted a recommendation for an applicant, it will be loaded into subsequent forms for edit/reuse.

View the Opportunity Details

### Information about you, the recommender

| | |
|---|---|
| **Name** | Galen OToole |
| **Title** | Fellow |
| **Institution/Organization** | Santa Clara Valley Water District |
| **Phone** | (415) 672-0757 |

### Information about the applicant

**How long and in what association have you known this applicant?**
Patrick Hassett worked with me as a research assistant for two years while I was a graduate research associate at Humboldt State U. I managed the design, construction, start-up, and testing phases of a reverse osmosis--pressure retarded osmosis pilot facility on Humboldt Bay, CA. Patrick worked with me in several capacities during all four phases of the project. First, he created a Fortran 90 transport model of pressure retarded osmosis and made a Python-based graphical user interface which seamlessly calls the Fortran program in a user-friendly format. Second, Patrick helped design and program the data acquisition and control systems for the pilot. Third, he helped during start-up to run tests and troubleshoot problems. Fourth, Patrick helped to test hypotheses by collecting and analyzing data from the pilot. I felt lucky to have Patrick working for me because he always exceeded my expectations and required minimal oversight.

Compared to other individuals of comparable age and experience you have known in the last five years, how would you rate the applicant with respect to the following PERSONAL CHARACTERISTICS?

| | |
|---|---|
| **Motivation and persistence toward a productive career** | Very Good |
| **Growth during total period observed** | Excellent |
| **Imagination and originality of thought** | Excellent |
| **Emotional maturity and stability** | Very Good |
| **Ability to work with others** | Excellent |
| **Independence and self-reliance** | Very Good |
| **Leadership potential** | Good |

**Applicant Name:** patrick hassett

**Organization:** U.S. Environmental Protection Agency (EPA)
**Program:** Office of Research and Development/National Homeland Security Research Center (ORD/NHSRC)

Compared to other individuals of comparable age and experience you have known in the last five years, how would you rate the applicant with respect to the following SCIENTIFIC CHARACTERISTICS?

| | |
|---|---|
| **Mastery of fundamental knowledge in field** | Very Good |
| **Skill/originality of research project design** | No Basis For Judgment |
| **Laboratory skills and techniques** | Very Good |
| **Productivity in research** | Very Good |
| **Ability to work with others** | Excellent |

**Add any descriptive comments that will assist in providing a complete picture of applicant's character, attitude, abilities, and potential.**

Several things impressed me about Patrick. He almost always had a genuine smile on his face. His positive attitude helped him to seek solutions quickly, and I never noticed him get bogged down by the frequent dead ends, failures, and set-backs that are common with pilot projects. Patrick and his programming teammate regularly encountered tasks which required additional research into unfamiliar areas of both transport kinetics and programming. He always managed to find extra time to teach himself the necessary skills and knowledge to create robust and thorough solutions. When working for me to program the data acquisition system, I described a rough design outline, and Patrick created programming solutions which efficiently and elegantly met the design objectives. Patrick has excellent attention to detail and great note-taking skills. He is a self-motivated researcher that has high expectations of himself and maintains high standards.